SDI planning using the system dynamics technique within a community of practice: lessons learnt from Tanzania

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Abstract
There exist major challenges in accelerating the spatial data infrastructure (SDI) planning process in the developing countries as well as advocating for politicians to support the development of SDI, due to the high complexity of SDI, lack of knowledge and experience, and limited insight in the benefits. To address these challenges, a methodology for SDI planning in Tanzania, based on the system dynamics technique and the communities of practice concept, was adopted and applied within a community consisting of experts from stakeholder organizations. The groups gathered to develop an SDI plan, while they shared their knowledge and discussed their ideas that helped their understanding of SDI. By running the system dynamics model, the development of SDI over time could be simulated that gave the planning community an insight about the future effects of today's plans and decisions. Finally, an optimum model could be developed by refinements and improvements done with the consensus of the SDI stakeholders. This model included the components and policies that are essential for a successful SDI implementation in Tanzania and can be used as a basis for SDI planning and help to gain political support. Lessons learnt from this research were promising regarding the usability of the methodology for SDI planning in comparable countries.

Keywords
Spatial data infrastructure (SDI), planning, system dynamics technique, community of practice,